



PRIORITY ISSUES AND NEEDS RELATING TO THE CONSERVATION OF CENTRAL NORTH AMERICAN GRASSLANDS OF TRINATIONAL IMPORTANCE

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BACKGROUND

Grasslands are considered one of the most threatened environments in North America. Many conservation initiatives have been carried out to protect this ecosystem at a national and binational level, especially within and between Canada and the United States. Mexico's potential importance, however, cannot be overstated in considering grassland conservation at the North American scale. Since 2000, the three federal Wildlife Services of North America have agreed to work together to protect 17 species of wild birds and mammals considered "*Species of Common Conservation Concern*" (SCCC)¹. Given that the majority of these species are associated with grasslands, the CEC organized a workshop to establish the foundations of a conservation strategy for these species. The workshop took place in Nuevo Casas Grandes, Chihuahua, Mexico, March 2001, and involved government representatives from Canada, USA and Mexico, as well as representatives from NGOs, academia and landowners. One of the key results of this workshop² was the elaboration of a shared vision:

To develop and maintain a network of ecologically functioning, social and economically viable, grassland landscapes in North America, through the application of principles and practices of maintenance, prevention and recovery of habitats and wildlife, including the species of common conservation concern, and through multilevel collaboration.

While the wording of this draft vision is still under discussion, it is clear that achieving a shared vision will require, among other, a shared understanding of the current status, needs and trends of grasslands throughout North America; the joint identification of areas of conservation and protection priority; learning from current grassland use practices, and the development of mutually agreed upon outreach efforts.

Following upon the suite of recommendations resulting from the Trinational Grassland SCCC workshop held in Chihuahua, the CEC has agreed to facilitate in cooperation with

¹ These species include the Ferruginous Hawk, *Buteo regalis*; Peregrine Falcon, *Falco peregrinus*; Loggerhead Shrike, *Lanius ludovicianus* Piping Plover, *Charadrius melodus*; Mountain Plover, *Charadrius montanus*, Burrowing Owl, *Athene cucularia*; Northern Spotted Owl, *Strix occidentalis caurina*; Mexican Spotted Owl, *Strix occidentalis lucida*; Golden-cheeked Warbler, *Dendroica chrysoparia*; Whooping Crane, *Grus americana*; California Condor, *Gymnogyps californianus*; Black-tailed Prairie Dog, *Cynomys ludovicianus*; Sonoran Pronghorn, *Antilocapra Americana sonoriensis*; Lesser long-nosed bat, *Leptonycteris curasoae yerbabuena*; (Greater) Mexican long-nosed bat, *Leptonycteris nivalis*; Black Bear, *Ursus americanus*; Gray Wolf, *Canis lupus*. The complete report on these species can be obtained at http://www.cec.org/files/PDF/BIODIVERSITY/SCCC-Web-e_EN.PDF

² The complete report is available upon request and can also be obtained at http://www.cec.org/files/PDF/BIODIVERSITY/Chihuahua_Meeting_Final_report-Reporte_final.PDF

Mexico, U.S. and Canada a focus on the conservation of grasslands of trinational importance³.

To further the process of potential cooperation it was deemed necessary to develop a framework document conducive to a grassland conservation strategy for North America. This drafting effort is currently being coordinated at a national scale by

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|---|---|---|
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And at the CEC by Jürgen Hoth, Program for the Conservation of Biological Diversity, North American Commission for Environmental Cooperation 393 rue St-Jacques Ouest, Bureau 200, Montreal, Quebec, CANADA H2Y 1N9 Tel: (514) 350 4307 Fax: (514) 350 4314
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About 30 advisors were also identified in each of the three countries to assist the three coordinators and a workshop was held in Montreal in February 2002 to discuss the process to develop the framework document and its structure and content.

It was agreed at the Montreal meeting that the framework document would:

- Build upon the trinational vision and guiding principles for the conservation of North American grasslands articulated in the March 2001 Chihuahua meeting and the February 2002 Montreal workshop.
- Identify the issues, needs and opportunities for grassland conservation in each country.
- Provide examples of partnerships and projects that are effective in achieving grasslands conservation.
- Determine the role of a trinational strategy, highlighting the opportunities for international cooperation with regards to the conservation of grassland habitat and wildlife, including the SCCC.
- Describe the process that led to the development of the document and provide guidance for further development towards a strategy.

Further, it was intended that the document:

- Would act as a guidance document.
- Would be used to foster awareness and cooperation in the three nations through existing programs and delivery mechanisms.

³ The updated overview of CEC's grasslands initiative report is available upon request and can also be obtained at http://www.cec.org/files/PDF/BIODIVERSITY/SCCC-G_overview.pdf

- Should be eligible to receive endorsement from the highest levels possible and be distributed as widely as possible.
- Would focus on the central Great Plains of Canada, the U.S. and desert grasslands of Mexico (e.g. Chihuahua and Sonora deserts) for tri-national attention.
- Would help to link the work or initiatives of other national / international groups working on grasslands.
- Would help to strengthen the involvement of other resource groups besides wildlife, e.g. soils, agriculture, water groups, First Nations/Native Americans.
- Would help to strengthen the involvement of landscape-based and habitat-based professional groups.
- Would primarily target political decision-makers in order to garner support at the national / international level as well as land owners and managers with a focus on land stewardship.
- Would focus on grasslands at the habitat / ecosystem levels while not losing focus on the species of common conservation concern.

ISSUES AND NEEDS

The three country coordinators are currently focusing on identifying the issues and needs related to the conservation of central North American grasslands. Preliminary work has already been done to establish a list of issues and needs which are included as an appendix, and were obtained from the literature, meetings and personal experience.

“Issues” might best be considered as “the problems/challenges”, i.e. what are the major problems that need to be addressed, both in the short and long term, to achieve the conservation of central North American grasslands? In particular, what issues or problems exist that could adequately be addressed through a trinational approach? “Needs” should be thought of as what can be done to address the issues or problems, again with the focus on a trinational approach.

We are asking your assistance in identifying and ranking those issues that you regard as requiring the most urgent attention in the terms of the conservation of central North American grasslands.

Through the February 2002 workshop in Montreal, a number of criteria were developed to assist in identifying and ranking issues and needs.

Criteria

The following criteria are not presented in order of importance. For different agencies, organizations or land owners, different criteria will assume greater importance than others.

1. Should be of potential relevance in all 3 countries (e.g., soil erosion, carrying capacity, large scale), i.e. of trinational importance but with recognition that there are critically important issues that are bi-national; Must be of at least national priority.
2. Must address policy and agency needs (e.g., align agricultural policy in the 3 countries, lack of institutional capacity and infrastructure).

3. Must be of high ecological importance (e.g., function, services, and ecological integrity).
4. Must reflect a potential need for collaboration (e.g., agency fitness, landowners' awareness/participation, degree of involvement).

Actions Requested of Advisors

Given the above criteria, we request that you review the lists of issues and needs identified in Appendix 1 and provide us with: (1) your assessment of which are the critically important issues for the conservation of central North American grasslands from a trinational perspective; and (2) what needs to be done to best jointly address those issues.

Please note that Appendix 1 contains columns for each country within which you are asked to rank the issues and needs in terms of whether they are of short (immediate to 1 year) or mid-term (>1 – 5 years) importance (on a scale of 1 -3 “1” = very important; “2” = important “3” = not important).

Space is also provided in case you want to put forward another issue or need. If possible, please submit references that support the suggestions made.

If you have any questions or concerns, please contact the coordinator in your country.

We ask that you **please provide us with your assessment by March 25/02**. The coordinators will compile and integrate the results for use in the framework document.

David Gauthier

Alberto Lafon

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APPENDIX 1. PRELIMINARY LIST OF ISSUES AND NEEDS.

This list of issues and needs has been identified from literature as well as discussions with various experts in grasslands conservation. Any one issue or need may not necessarily apply to all three countries.

Space has been provided in the lists for you to enter in any additional issues or needs that you feel are important.

Relative to the country or countries with which you have the greatest familiarity, please indicate which issues and needs are important in both the short-term and long-term. We are defining short-term (ST) as a time period up to one year from now, i.e. the issue or need is of immediate concern. Mid-term (MT) is defined as 1-5 years from now. We also ask you to rank the issue or need according to a rank that ranges from whether you feel it is of very high importance to no importance.

1 = of highest importance

2= important

3= not important

9=unknown

You may find that some issues or needs are of high importance in the short term but of lesser importance in the mid-term.

Below is an example of a completed form for the first set of issues as completed by a respondent with familiarity of only the Canadian prairies.

EXAMPLE

| ISSUES | CANADA | | MEXICO | | U.S.A. | |
|--|--------|----|--------|----|--------|----|
| | ST | MT | ST | MT | ST | MT |
| BIODIVERSITY | | | | | | |
| Species: | | | | | | |
| 1. Decline in biodiversity. | 1 | 1 | | | | |
| 2. Extirpation of species. | 2 | 1 | | | | |
| 3. Altered guild structure/species composition of predators. | 3 | 2 | | | | |
| Other: | | | | | | |
| | | | | | | |
| Habitats: | | | | | | |
| 4. Too great a focus on species management and insufficient focus on community / habitat / ecosystem management. | 2 | 2 | | | | |
| 5. Loss and fragmentation of wildlife habitats in mixed, short and tall grass areas. | 3 | 2 | | | | |
| Etc... | | | | | | |

ISSUES

| ISSUES | CANADA | | MEXICO | | U.S.A. | |
|---|--------|----|--------|----|--------|----|
| | ST | MT | ST | MT | ST | MT |
| BIODIVERSITY | | | | | | |
| Species: | | | | | | |
| 1. Decline in biodiversity. | | | | | | |
| 2. Extirpation of species. | | | | | | |
| 3. Altered guild structure/species composition of predators. | | | | | | |
| Other | | | | | | |
| | | | | | | |
| | | | | | | |
| Habitats: | | | | | | |
| 4. Too great a focus on species management and insufficient focus on community / habitat / ecosystem management. | | | | | | |
| 5. Loss and fragmentation of wildlife habitats in mixed, short and tall grass areas. | | | | | | |
| 6. Conversion of grasslands to cropland and other land uses. | | | | | | |
| 7. Fragmentation of Riparian Habitat corridors and depletion of aquatic resources. | | | | | | |
| 8. Altered disturbance regime (e.g. fire suppression, loss of burrowing mammals, altered grazing regime from that of wild grazers). | | | | | | |
| 9. Loss in structural diversity due to altered disturbance regimes. | | | | | | |
| 10. Creation of artificial habitats that negatively impact on the survival of endemic grassland species. | | | | | | |
| | | | | | | |
| | | | | | | |
| Information / Data: | | | | | | |
| 11. Lack of a full biotic inventory for grasslands. | | | | | | |
| 12. Lack of adequate biophysical trend data for grasslands. | | | | | | |
| 13. Lack of data and knowledge from private lands about (species, status, trends etc.) (and other land tenures for México). | | | | | | |
| Other | | | | | | |
| | | | | | | |
| | | | | | | |
| Water: | | | | | | |
| 14. Overexploitation of ground water. | | | | | | |
| 15. Insufficient understanding of hydrologic function in relation to various land uses that negatively impacts on grassland conservation. | | | | | | |
| Other | | | | | | |
| | | | | | | |
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| Invasive Species: | | | | | | |
| 16. Increasing numbers of introduced and invasive plant and animal species that negatively impact on native grassland ecosystems. | | | | | | |

| ISSUES | CANADA | | MEXICO | | U.S.A. | |
|---|--------|----|--------|----|--------|----|
| | ST | MT | ST | MT | ST | MT |
| Inv./Cont Other: | | | | | | |
| | | | | | | |
| | | | | | | |
| LAND USE PRACTICES AND MANAGEMENT | | | | | | |
| Grazing Management: | | | | | | |
| 17. Overgrazing, or over use, of grasslands by domestic grazers. | | | | | | |
| 18. Limited understanding of how to manage livestock grazing so that its effects resemble evolutionary/ecological effects of wild grazers. | | | | | | |
| 19. Negative impacts of grazing in riparian zones and wetlands | | | | | | |
| 20. Inadequate implementation of grazing as a wildlife habitat management tool. | | | | | | |
| 21. Impacts of current grassland management on wildlife. | | | | | | |
| 22. Negative impacts on grasslands related to timing of haying operations | | | | | | |
| 23. Impacts of the management of wastes from cattle feedlots and hog operations on riparian areas and water quality and quantity. | | | | | | |
| 24. Lack of pasture management programs in government agencies. | | | | | | |
| 25. Loss of traditional practices in pasture management. | | | | | | |
| 26. Lack of extension and outreach programs to achieve more appropriate grazing management. | | | | | | |
| 27. Inadequate use of life fences. | | | | | | |
| 28. Lack of wildlife-friendly fences and/or pasture systems. | | | | | | |
| Other | | | | | | |
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| | | | | | | |
| Protection: | | | | | | |
| 29. Insufficient areas of grasslands receive conservation protection. | | | | | | |
| 30. Insufficient use in grassland protected areas of management practices that emulate natural ecological processes . | | | | | | |
| Other | | | | | | |
| | | | | | | |
| | | | | | | |
| Land conversion, development and intensification: | | | | | | |
| 31. Impacts on grasslands of exploration and development activity associated with oil and gas (seismic activity, access roads, well sites, processing facilities, pipelines). | | | | | | |
| 32. Impacts related to the development of industrial sites, sites for new plants and factories, open pit mines, sand and gravel pits and dams that reduce the grassland land base. | | | | | | |
| 33. Impacts associated with increased recreational use of grasslands around urban centres. | | | | | | |
| 34. Impacts associated with the expansion of urban, suburban and country residential areas into grasslands, such as hobby ranchers purchasing lands adjacent to grasslands and contributing to further fragmentation through plantings of trees, fences, housing etc. | | | | | | |

| ISSUES | CANADA | | MEXICO | | U.S.A. | |
|---|--------|----|--------|----|--------|----|
| | ST | MT | ST | MT | ST | MT |
| 35. Fragmentation of habitats resulting from road and drainage networks and renewal of rural road infrastructure. | | | | | | |
| 36. Impacts of agricultural practices that: level and drain the land, till the soil, reroute natural watercourses, supplement natural precipitation with irrigation, apply additional nutrients, control weeds and animal pests, increase risk of soil and water erosion, salinization and compaction, and lead to declining soil and water quality. | | | | | | |
| 37. Direct habitat loss from marginal land conversion and intensification. | | | | | | |
| 38. Draining and filling of wetlands. | | | | | | |
| 39. Continued ploughing of native grasslands. | | | | | | |
| 40. Lack of technical assistance to private landowners on how to manage for prairie birds and other wildlife, especially non-game species. | | | | | | |
| Other | | | | | | |
| | | | | | | |
| | | | | | | |
| Climate Change: | | | | | | |
| 41. Impacts of global climate change and its implications for the conservation of grasslands. | | | | | | |
| 42. Potential for increased demands for water and irrigated crop acreage due to warmer and drier climate. | | | | | | |
| 43. Potential for water shortages and conflicts due to drier climate and increased competition from other sources. | | | | | | |
| 44. Inadequate recognition of the benefits of grasslands as a sink of atmospheric carbon because of changes in organic carbon levels. | | | | | | |
| 45. Increases in agricultural greenhouse gas emissions, particularly nitrous oxide and methane due mainly to greater use of mineral fertilizers and higher livestock numbers. | | | | | | |
| 46. Impacts on grasslands associated with reduction of the earth=s ozone layer. | | | | | | |
| Other | | | | | | |
| | | | | | | |
| | | | | | | |
| Pollutants: | | | | | | |
| 47. Environmental risks associated with impact of nutrient and chemical applications (e.g. inappropriate nitrogen and phosphorus use, deposition of ammonia and acid rain, emissions of nitrous oxide.) on (a) reduced soil and water quality, (b) reduced air quality from spray drift and vapour from volatilized spray materials, (c) biodiversity because of effect on non-target species and interference with normal predator prey relations. | | | | | | |
| 48. Air and water pollution impacts associated with increased use of concentrated animal feeding operations. | | | | | | |
| Other | | | | | | |
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| ISSUES | CANADA | | MEXICO | | U.S.A. | |
|--|--------|----|--------|----|--------|----|
| | ST | MT | ST | MT | ST | MT |
| Biotechnology/GMC: | | | | | | |
| 49. Effects of genetically modified crops on land, wildlife, habitats and, potentially, human health, e.g. impacts of biotechnology corn on monarch butterfly population. | | | | | | |
| Other | | | | | | |
| | | | | | | |
| | | | | | | |
| POLICIES and SOCIAL AND ECONOMIC ISSUES | | | | | | |
| 50. Limited use of cooperative community, collective, or group management to manage pastures in larger units. | | | | | | |
| 51. Over-reliance on cooperative community, collective, or group management to manage pastures in larger units. | | | | | | |
| 52. Lack of incorporation of non-game species in many management plans in all sectors. | | | | | | |
| 53. Lack of coordination between planning efforts within and among countries. | | | | | | |
| 54. Lack of involvement of non-traditional sectors of society (e.g. homebuilders, mining companies, transportation departments) in grassland conservation efforts. | | | | | | |
| 55. Stakeholders (e.g. ranchers, farmers, First Nations/Native Americans) often left out of the planning process. | | | | | | |
| 56. Lack of incentives for preservation, restoration or management of grasslands. | | | | | | |
| 57. Not enough rewards for good stewardship. | | | | | | |
| 58. Insufficient innovative, alternative mechanisms to fund grassland conservation (e.g. too much reliance on government funding). | | | | | | |
| 59. No established market value for public goods (i.e. ecosystem services) provided from lands managed by private land owners. | | | | | | |
| 60. Conservation Groups and Governments: Resources (\$ and time) oriented towards planning, bureaucracy, and coordination, with too little portion of time spent on on-the-ground activities that directly influence the habitat (e.g. overlapping bird conservation plans). | | | | | | |
| 61. Lack of information about the linkages between economic impacts and benefits and ecological impacts and benefits. | | | | | | |
| 62. Absolute decision-making power of the owners of the resources. | | | | | | |
| 63. Lack of explicit linkages between conservation and production policies and programs. | | | | | | |
| 64. Insufficient linkages existing between producers and technical specialists to promote grassland conservation. | | | | | | |
| 65. Inadequate legislation to insure the conservation of endangered, threatened or vulnerable species. | | | | | | |
| 66. Lack of or inadequate policies, programs, regulations, enforcement to support many conservation programs. | | | | | | |
| 67. Inefficiency, unclear or contradicting missions, internal bureaucratic malfunctions and over all lack of responsiveness and communication within and among government agencies that negatively impact on grassland conservation. | | | | | | |
| 68. Reluctance of landowners to participate with | | | | | | |

| ISSUES | CANADA | | MEXICO | | U.S.A. | |
|--|--------|----|--------|----|--------|----|
| | ST | MT | ST | MT | ST | MT |
| government and conservation groups due to potential infringement on private property rights. | | | | | | |
| 69. Lack of time and effort to work cooperatively across political boundaries. | | | | | | |
| Other | | | | | | |
| | | | | | | |
| | | | | | | |
| Markets, Economic Policies and Income Security: | | | | | | |
| 70. Lack of productive and economic alternatives to the inappropriate use of grasslands. | | | | | | |
| 71. Lack of organization and marketing incentives to encourage more appropriate use of grasslands. | | | | | | |
| 72. Lack of technical assistance and mechanisms that inform and encourage ecologically sustainable economic diversification among agricultural producers. | | | | | | |
| 73. Lack of equity in the support provided to industry compared to producers (including small producers) resulting in negative impacts on grasslands. | | | | | | |
| 74. Lack of integration of overall economic system with ecological system (economy based on growth, ecology based on sustainability) i.e. ecosystem services not valued in economic system. | | | | | | |
| 75. Negative impacts of globalizing markets and trade liberalization on grassland conservation. | | | | | | |
| 76. Impacts of global subsidies and government support policies on commodity prices that result in negative impacts on grassland conservation. | | | | | | |
| 77. Lack of alternative social and financial mechanisms for grassland conservation such as mitigation banks, conservation easements, stewardship agreements . | | | | | | |
| 78. Market and consumer preferences that negatively impact upon grasslands. | | | | | | |
| 79. Lack of direct interaction, connection between urban consumers (markets) and producers (e.g. direct marketing by producers through the internet could help). | | | | | | |
| 80. High level of private land ownership requiring significant consultation with stakeholders by government and non-government (i.e. significant investment of resources for consultation). | | | | | | |
| 81. Changes in the ownership of grasslands that threaten conservation objectives. | | | | | | |
| 82. Perceived threats to the future economic security of agricultural producers (e.g. high volatility in agricultural prices, declining farm/ranching employment and income, declining overall employment and income and dependence on government aid, increased transportation costs and fuel prices) resulting in grassland conservation being a low priority for producers and policy makers. | | | | | | |
| 83. Policies that encourage greater farm size, farm specialization and production intensity at the expense of grassland conservation. | | | | | | |
| 84. Inefficient or unresponsive rural governance structures that result in little attention given to grassland conservation. | | | | | | |
| 85. Does increasing reliance on and consolidation of | | | | | | |

| ISSUES | CANADA | | MEXICO | | U.S.A. | |
|--|--------|----|--------|----|--------|----|
| | ST | MT | ST | MT | ST | MT |
| services in regional centres negatively impact on grassland conservation? | | | | | | |
| 86. Lack of management/communication (handling) among levels of government and the productive sector. | | | | | | |
| 87. Unwillingness of many country-side organizations to participate in grasslands conservation efforts. | | | | | | |
| 88. Inadequate monitoring mechanism of management programs that impact on grasslands conservation. | | | | | | |
| Other | | | | | | |
| | | | | | | |
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| Demographics: | | | | | | |
| 89. Depopulation and increasingly aging populations resulting in lack of local support for grasslands conservation. | | | | | | |
| Other | | | | | | |
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| Producer Behaviour: | | | | | | |
| 90. Resistance to change by producers in input use and farm management practices that negatively impact upon grasslands. | | | | | | |
| 91. Low level of awareness by producers of the values and profitability of the conservation of pastures and grasslands | | | | | | |
| 92. Lack of knowledge of producers about the role of wildlife in grassland ecosystems. | | | | | | |
| 93. Lack of producer confidence in government and non-government conservation policies and programs. | | | | | | |
| 94. Excessive political and social power of ranchers. | | | | | | |
| Other | | | | | | |
| | | | | | | |
| Education and Social Cohesion: | | | | | | |
| 95. Increased stress in rural communities (e.g. resulting from decreasing net incomes, inadequate or deteriorating health care facilities, increased needs for care of the aged) that result in grassland conservation being a low priority for local communities and policy-makers. | | | | | | |
| 96. Decreasing number of volunteers for community activities that support grassland conservation. | | | | | | |
| 97. Lack of means to communicate the needs of the agricultural producers to the federal, state / provincial managers and policy-makers. | | | | | | |
| 98. Lack of appropriate research and technologies that are responsive to the needs of producers that would lead to increased grassland conservation. | | | | | | |
| 99. Inadequate knowledge or appreciation by federal policy-makers or managers of specific regional problems when applying policies that impact on grasslands. | | | | | | |
| 100. Insufficient education programs (formal and informal) to increase awareness of grassland conservation issues among producers, general citizenry and decision-makers. | | | | | | |
| 101. Inadequate communication and collaboration between various sectors of society in regard to grassland conservation issues. | | | | | | |

| ISSUES | CANADA | | MEXICO | | U.S.A. | |
|---|--------|----|--------|----|--------|----|
| | ST | MT | ST | MT | ST | MT |
| 102. Lack of integration of information about grassland ecological services into the management of grasslands by land owners and land managers. | | | | | | |
| 103. Lack of awareness of the worth of environmental services provided by grasslands. | | | | | | |
| 104. Lack of accessibility to existing information about grassland conservation. | | | | | | |
| 105. Lack of opportunities for post graduate training on grassland issues | | | | | | |
| 106. Lack of permanent areas for research on grassland conservation issues. | | | | | | |
| 107. Inadequate research on wildlife for their recovery. | | | | | | |
| Other | | | | | | |
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NEEDS

| NEEDS | CANADA | | MEXICO | | U.S.A. | |
|--|--------|----|--------|----|--------|----|
| | ST | MT | ST | MT | ST | MT |
| BIODIVERSITY / HABITAT | | | | | | |
| 1. To restore wildlife populations, endangered species and natural processes to prevent extirpations, reverse declines and prevent exotic plant invasions. | | | | | | |
| 2. To achieve complete representation of biodiversity, identification, understanding and use of information about prairie ecosystems. | | | | | | |
| 3. . To restore wildlife populations, endangered species and natural processes to prevent extirpations, reverse declines and prevent exotic plant invasions. | | | | | | |
| 4. To identify target species, high value habitats and natural corridors for wildlife. To create a joint grasslands data base or (data network), available to all parties. | | | | | | |
| 5. To determine the biotic and abiotic requirements of native prairie species and communities and the management practices needed to sustain them. | | | | | | |
| 6. To cCounteract the excessive removal of flora and fauna. | | | | | | |
| 7. To promote habitat conservation. | | | | | | |
| Other | | | | | | |
| | | | | | | |
| | | | | | | |
| LAND USE PRACTICES AND MANAGEMENT | | | | | | |
| 8. To minimize human disturbance by adopting land use management practices and strategies that are reflective of local conditions. | | | | | | |
| 9. To sustain diverse ecosystems across the whole prairie. | | | | | | |
| 10. To reduce chronic overgrazing. | | | | | | |
| 11. To foster carbon sequestration. | | | | | | |
| 12. To restore degraded ecosystems. | | | | | | |
| 13. To promote improved liquid and solid storage methods for manure. | | | | | | |
| 14. To encourage the development of native plant covers and a native plant seed industry. | | | | | | |
| 15. To encourage the creation of markets for environmentally produced agricultural goods. | | | | | | |
| 16. To develop new pest control products and methods, refine non-chemical pest controls, update existing recommended fertilizer rates and develop them for new crops, and improve application practices. | | | | | | |
| Other | | | | | | |
| | | | | | | |
| | | | | | | |
| EDUCATION AND AWARENESS | | | | | | |
| 17. To facilitate changes of attitude and culture with respect to the use of natural resources by developing education and incentive programs that encourage best agricultural practices (such as conservation tillage systems, delayed haying, winter cover cropping, | | | | | | |

| NEEDS | CANADA | | MEXICO | | U.S.A. | |
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| rotational grazing systems, integrated pest management, planting shelterbelts and hedgerows, reducing summer fallow and converting cropland to permanent cover, management of riparian areas, conservation of wetlands and wetland buffers) directed at decision-makers, government officials and the public. | | | | | | |
| 18. To establish more outreach efforts to involve private landowners and the community (local, academic, sectoral, etc.) to increase awareness of the values and importance of contribution of landholders to grassland conservation. | | | | | | |
| 19. To promote net gain of grassland and promote ecosystem restoration (manage the impact of human activity). | | | | | | |
| 20. To support and promote the efforts of private and public land managers who conserve native prairie. | | | | | | |
| 21. To develop and increase educational programs that support traditional use of plants and animals and traditionalism in production. | | | | | | |
| 22. To integrate wildlife management issues into rangeland extension programming. | | | | | | |
| 23. To develop and recognize more local producer organizations and landowner contact programs that build relationships and raise awareness by improving communication among those working in grasslands (including states, provinces, and the private sector). | | | | | | |
| 24. To promote training opportunities for future land managers and encourage the incorporation of international prairie ecosystem studies and habitat conservation in formal education curricula at all levels and programs and extension services. | | | | | | |
| 25. To work with NABCI to make grasslands a high priority. | | | | | | |
| 26. To develop simple techniques for grasslands conservation that meet the needs of agricultural producers. | | | | | | |
| Other | | | | | | |
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| RESEARCH, MONITORING AND REPORTING | | | | | | |
| 27. To complete ecological, economic and social assessments of grasslands. | | | | | | |
| 28. To complete abiotic and biotic inventories of grasslands. | | | | | | |
| 29. To conduct research on the integration of ecosystem information in land management activities. | | | | | | |
| 30. To increase research on invasive and rare species and how to implement recovery and management plans. | | | | | | |
| 31. To increase research on impacts of invasive species. | | | | | | |
| 32. To improve measures (indicators) to assess effectiveness of planning, policies and programs. | | | | | | |
| 33. To develop and promote uniform and consistent long-term monitoring techniques and research relevant to prairie conservation between states and landowners | | | | | | |

| NEEDS | CANADA | | MEXICO | | U.S.A. | |
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| that can be applied to ecosystem management. | | | | | | |
| 34. To follow-up on and monitor habitat improvement projects. | | | | | | |
| 35. To generate information on the impacts of increasing recreational activities on wildlife. | | | | | | |
| 36. To assess the status, distribution and trends of existing functional grasslands in all three countries; special consideration should be granted to trans-boundary grasslands. | | | | | | |
| 37. To identify areas as conservation priorities associated with species assemblages (suites) and indicator species to establish a monitoring system to assess trends and conditions on species and ecosystems, and promote connectivity among well preserved sites and protected areas. | | | | | | |
| 38. To identify threats/stressors at different levels: by species, by ecosystem, by sites and by regions and the barriers to conservation and means to support and eliminate them, respectively. | | | | | | |
| 39. To explore the potential of carbon sequestration and new genetic, biochemical, pharmaceutical and other resources of use to humans as an economic incentive for restoration. | | | | | | |
| 40. To evaluate conservation tillage practices with respect to wildlife benefits. | | | | | | |
| 41. To develop a common terminology related to grassland ecology. | | | | | | |
| 42. To identify the key geographic areas that require immediate study or that provide the best information sources for grassland studies. | | | | | | |
| 43. To conduct research to measure contributions to bird population trends from breeding, wintering and migration seasons. | | | | | | |
| 44. To quantify changes in land cover and land use over time. | | | | | | |
| Other | | | | | | |
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| GOVERNMENT AND NON-GOVERNMENT POLICIES AND PROGRAMS | | | | | | |
| 45. To identify, promote and develop laws, regulations, policies and programs that favour the conservation of native prairie while preserving their cultural and economic values under all types of ownership and provide protection for at risk, sensitive and representative ecosystems. | | | | | | |
| 46. To carry out complete ecoregional planning across the Great Plains. | | | | | | |
| 47. To establish legislation for the protection of endangered species. | | | | | | |
| 48. To make changes to existing Endangered Species legislation, for example, to incorporate more flexibility and incentives for landowners; to base listing of species over whole range, not over political boundaries. | | | | | | |
| 49. To include all stakeholders in grassland conservation | | | | | | |

| NEEDS | CANADA | | MEXICO | | U.S.A. | |
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| planning and management. | | | | | | |
| 50. To improve grasslands management through incentives to landowners, encourage voluntary landowner stewardship, assistance to natural resources agencies in achieving objectives and involvement of citizens locally in environmental issues and decision making. | | | | | | |
| 51. To develop innovative markets for traditional agricultural commodities (e.g. direct local marketing, internet marketing). | | | | | | |
| 52. To develop markets for non-traditional products (e.g. mitigation banks, conservation easements, carbon sequestering credit systems, conservation buyers, eco-tourism) that favour grassland conservation. | | | | | | |
| 53. To create free-market incentives for private landowners to deliver ecological services as a new form of farm product (e.g. wetlands for flood control, Endangered Species habitat). | | | | | | |
| 54. To develop and sustain new, better and well-funded conservation reserve programs. | | | | | | |
| 55. To develop and support programs that remove marginal lands from production and offer tangible economic advantages to producers (e.g. minimum and zero-tillage practices, integrated pest management). | | | | | | |
| 56. To adopt an inter-agency approach to identify areas of high risk for drainage / destruction. | | | | | | |
| 57. To establish a one-stop@ shopping approach to delivery of conservation programs and promote government actions through changes in policy measures including regulatory approaches, training and information initiatives, and research and development. | | | | | | |
| 58. To set habitat goals that recognize the needs of targeted groups of species found regionally and establish habitat thresholds and large and continuous protected areas/habitats. | | | | | | |
| 59. To develop and support programs that promote coordination among international, federal, state/provincial and municipal policies that implement recovery plans for species identified as endangered or threatened and facilitate the exchange of information and technical expertise regarding the conservation of species at risk. | | | | | | |
| 60. To create new fundraising tools for North American Grasslands Conservation (North American Grasslands Conservation Fund) through the private sector | | | | | | |
| Other | | | | | | |
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